

Integrated Battlespace Collaborative Communications

IBC2

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Information sources: Air Force Print News
Illustrated by Karen Petitt

Joint Expeditionary Force Experiment '06 ROUNDUP

Tapping into unused airspace with COMBAT SKYSAT

...a radio repeater platform
launched into near-space.

Combat Skysat uses balloons to take advantage of untapped airspace and improve line-of-sight ground communications. It's attached to what can be compared to a weather balloon and can transmit information hundreds of miles farther than traditional radios. Cruising altitude is between 65,000 and 95,000 feet.

It simply changes the line of sight. Special operators or any military member who either goes on convoy operations or works in an urban environment can benefit from it. Hilly terrain or thick walls in an urban environment can weaken radio transmissions, but if the signal is bounced off an aerial platform, it not only allows for clearer transmissions, it extends communication range. The standard ground radio range is roughly 5 to 10 miles, but with Combat Skysat,

warfighters can exchange information over more than 600 miles. In the past, satellites were used to provide the long-range relay ability for ground communications, but the lines were often clogged with high-priority information and were too slow for the fast-paced ground environment.

The balloon takes about 20 minutes to launch, but can stay in the air an average of 12 hours per flight. It's remotely flown from the launch site through ballast and vent controls, much like those on a hot-air balloon.

Depending on the hostility of the environment, the balloon either can be retrieved for future use or left behind.

With the cost of commercial satellites averaging more than \$300 million, the \$6,000 skysat makes "low-priced" seem like a slight understatement, say officials.

Two aircraft — a B-52 and a B-1 — took part in demonstrating software called the Integrated Battlespace Collaborative Communications tool, known as IBC2, during the Joint

Expeditionary Force Experiment at Nellis AFB, Nev., which concluded Apr. 28. The intent of the software is to make sharing imagery from an aircraft over a data-link more efficient to save bandwidth on the network, while simultaneously increasing situational awareness. This software delivered the (B-1's) radar data and (B-52's) video

Sharing imagery from an aircraft over a data-link saves network bandwidth

imagery from the aircrafts' targeting pods directly to a network server at the Combined Air Operations Center. Other aircraft participating in the exercise could then view the imagery and either use text chat or a "whiteboard" feature to share information about the imagery. This information will fill current gaps within the Intelligence, Surveillance and Reconnaissance field, as well as enhance warfighter situational awareness. The IBC2 software also supported the Network-Centric Weather Integration, or NCWI, initiative. It worked with the Air Force Weather Agency's joint weather impacts system server to pull forecasts, weather maps and weapons effects analyses and allowed the pilots to view the information directly from the cockpit while flying their missions. Using IBC2 and a new Tactical Targeting Network Technology, will provide pertinent, real-time, machine-to-machine weather information necessary to put bombs on target.



TBONE & BACN

The Theater Battle Operation Net-centric Environment and the Battlefield Airborne Communications Node — known as TBONE and BACN — are two other items tested at JEFX '06. TBONE will shift information as a weapon system to a Web-enabled, PC-capable application environment. BACN is an airborne communications relay and information server. It flies at extremely high altitudes, allowing real-time information exchanges between different tactical data link systems. It also permits data storage and sharing.

Special Operations Forces Warfighter Process Enhancements SWIPE

This isn't a stand-alone system—it's simply the umbrella term for four enhancements to the Special Operations toolkit. The four components, as noted below, combine to give Special Operations Force teams greater mission planning and execution capabilities.



The **Special Operations Tactical Network** is a software package that lets teams share data and images, chat and load video. Using a wireless network, team members located in remote areas can "daisy-chain" information from one person to the next, providing seamless command and control.



The **Remote Sensor-Iridium** initiative is a sensor about the size of a shoe box that can be hidden in an area and then report data via the Iridium satellites. While unattended, it can automatically feed data back to mission planners or the Combined Air Operations Center.

The **Geographic Suitability Assessment Tool** allows planners to look at maps and get key data such as weather and soil types, and chemical or biological threats, as well as topology.

The **Command and Control Mission Manager** automates the process for SOF teams to request air support. Teams can work off-line and later upload their requests when needed.

